

CCA GCA ACC AAT GAT GCC CGT T-TAMRA-3'  
 CA GCA ACC AAT GAT GCC CGT T-TAMRA-3'

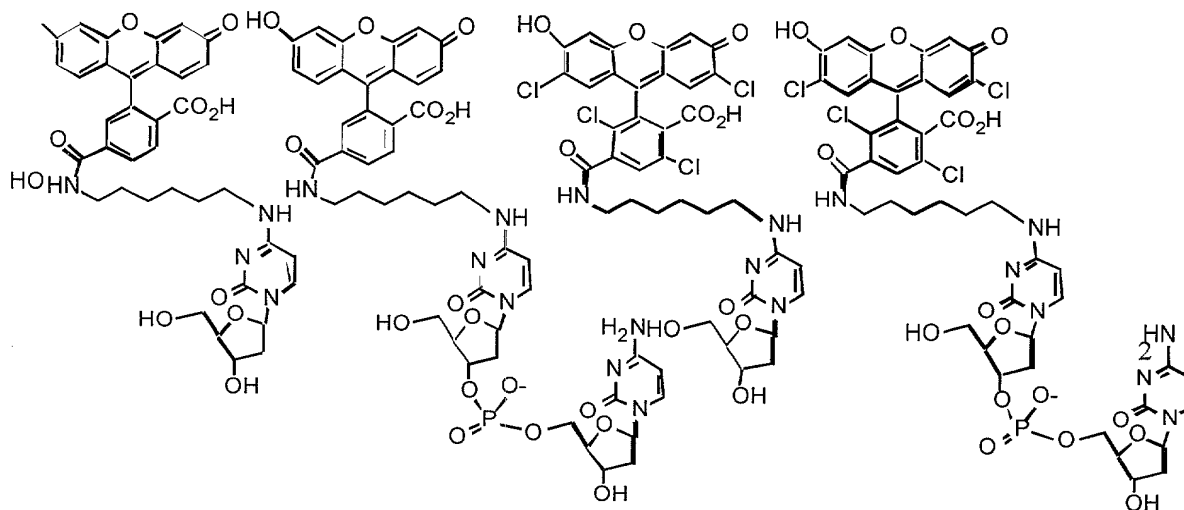
CCA GCA AGC ACT GAT GCC TGT T-TAMRA-3'  
 CA GCA AGC ACT GAT GCC TGT T-TAMRA-3'

**Fig. 1A**

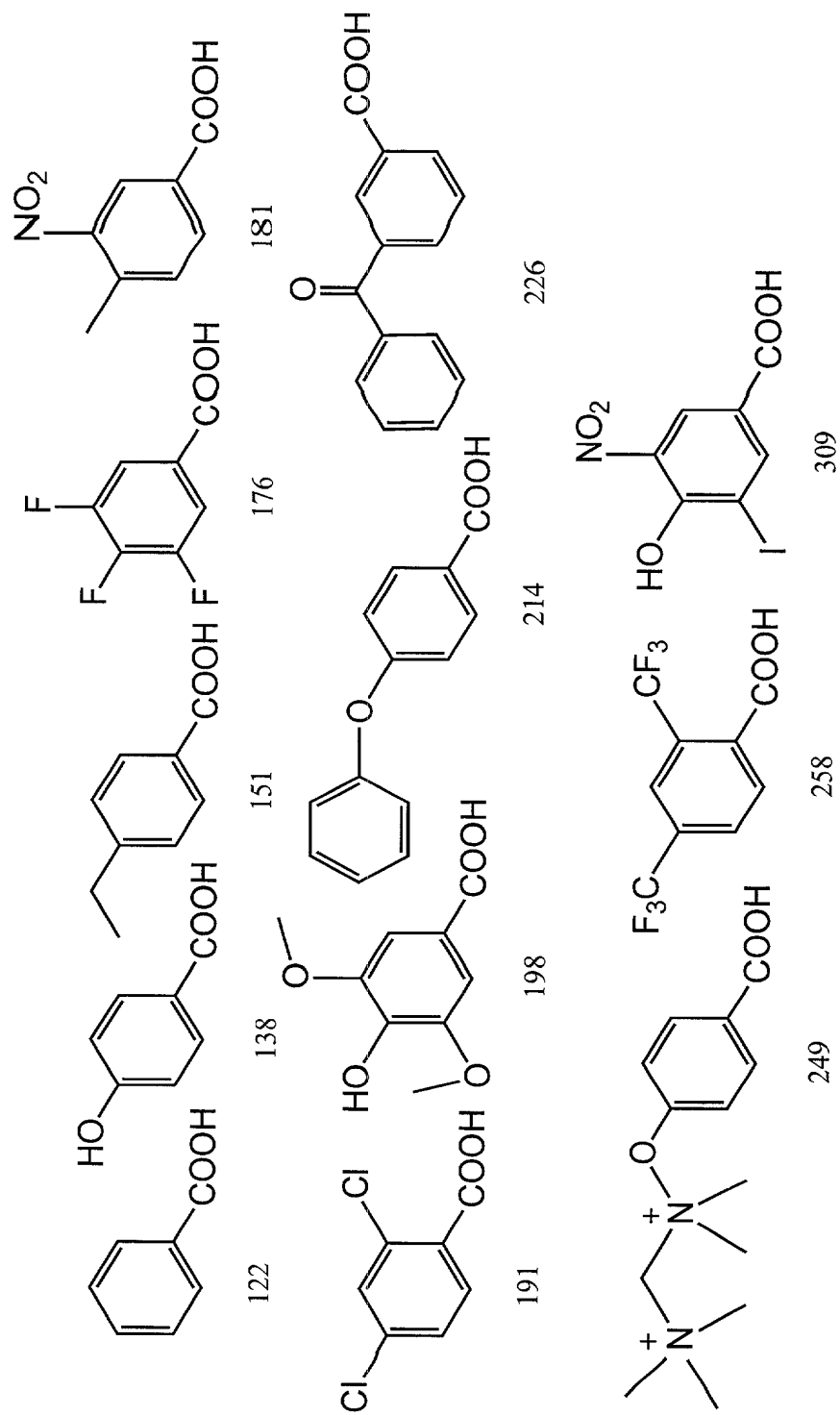
	Fluorescent Dyes	
	<u>Absorbance Maxima</u>	<u>Emission Maxima</u>
Fluorescein	494nm	525nm
Tetrachloro fluorescein	521nm	536nm
TAMRA	565nm	580nm

**Fig. 1B**

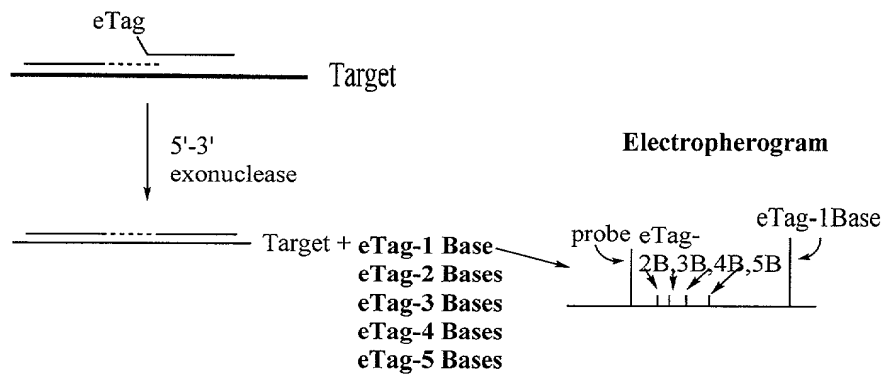
Cleaved Fragments:



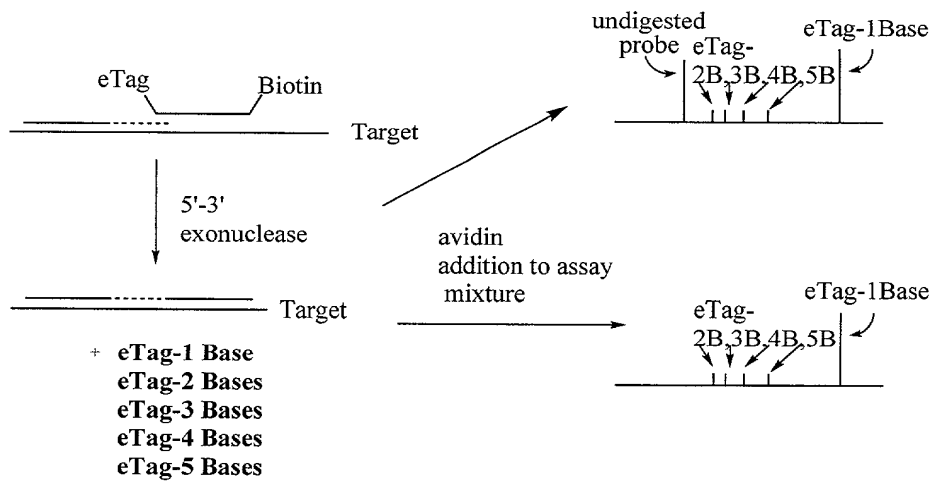
**Fig. 1C**



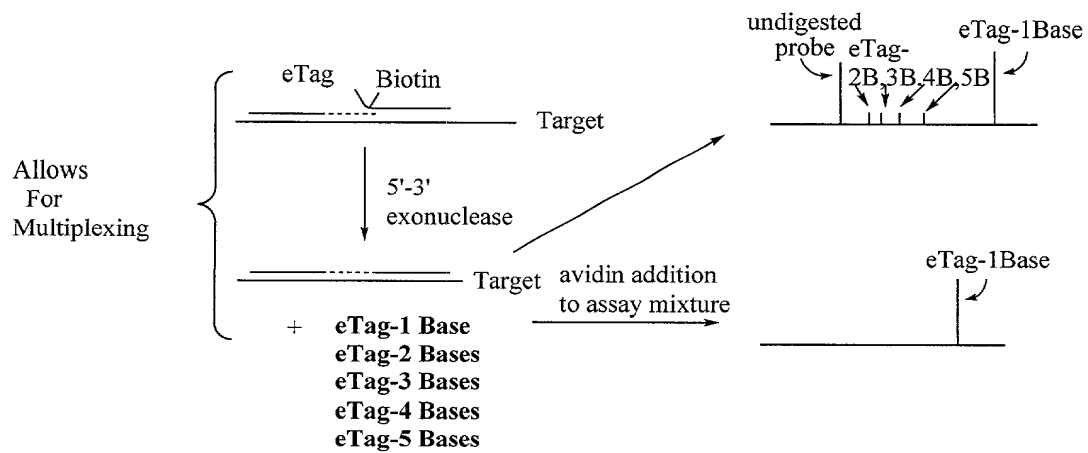
**Fig. 2**



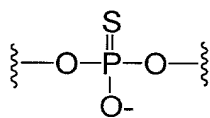
**Fig. 3A**



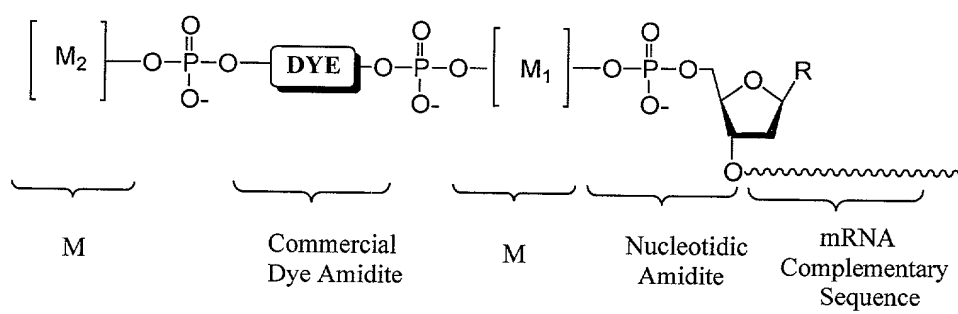
**Fig. 3B**



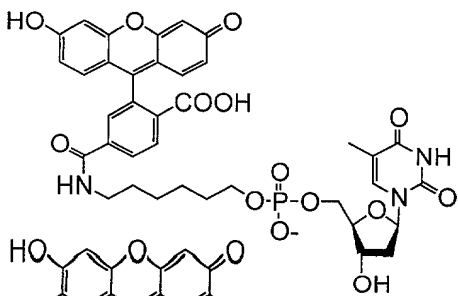
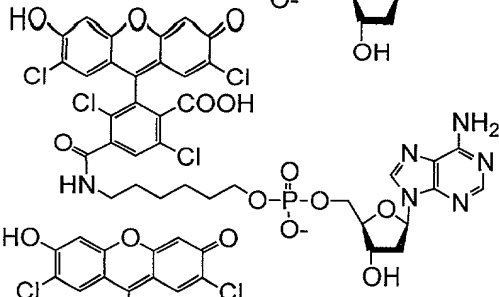
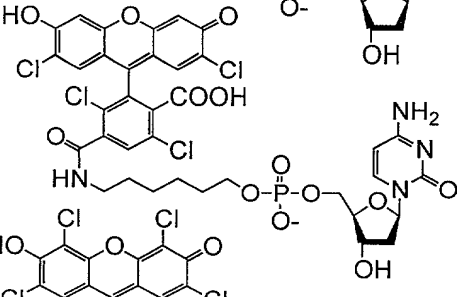
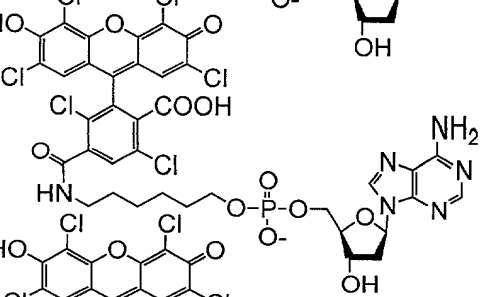
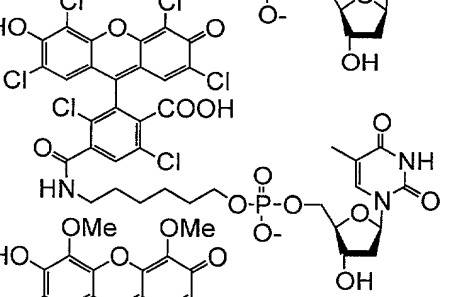
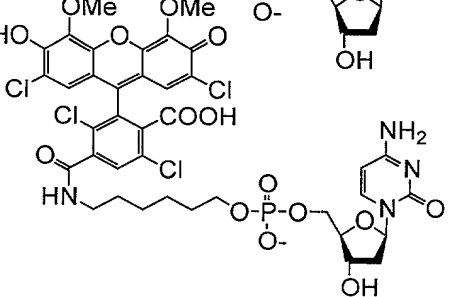
**Fig. 3C**



**Fig. 3D**



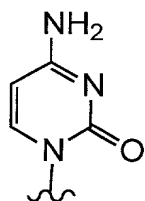
**Fig. 4**

<u>e-tag Reporter</u>	<u>Elution Time on CE, min</u>	<u>Mass</u>
	6.4	778
	7.1	925
	7.3	901
	7.7	994
	8.0	985
	9.25	961

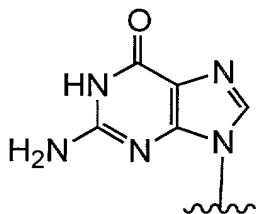
**Fig. 5**

e-tag Reporter	Charge	Elution Time, min
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{C}_3 \text{C}_3 \text{C}_3 \text{C}_3 \text{C}_3 \text{---} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-8	12.1*
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{C}_6 \text{C}_6 \text{C}_6 \text{C}_6 \text{C}_6 \text{C}_6 \text{---} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-9	12.7
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{C}_6 \text{C}_6 \text{C}_6 \text{C}_6 \text{C}_6 \text{---} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-8	12.8
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{C}_6 \text{C}_6 \text{C}_6 \text{C}_6 \text{---} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-7	13.1
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{C}_3 \text{C}_3 \text{C}_9 \text{---} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-6	13.0
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{C}_6 \text{C}_6 \text{C}_6 \text{---} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-6	13.4
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{C}_3 \text{C}_3 \text{---} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-5	12.8*
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{C}_3 \text{C}_9 \text{---} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-5	13.2*
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{C}_9 \text{C}_9 \text{---} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-5	14.8
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{TTT} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-6	17.3
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{TT} \text{dC} \\ \parallel \\ \text{O}^- \end{array}$	-5	17.0
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{C}_9 \text{---} \text{dT} \\ \parallel \\ \text{O}^- \end{array}$	-4	15.2*
$\begin{array}{c} \text{O} \\ \parallel \\ \text{HN} \text{---} \text{C}_5 \text{---} \text{O} \text{---} \text{P} \text{---} \text{O} \text{---} \text{TdC} \\ \parallel \\ \text{O}^- \end{array}$	-4	16.5

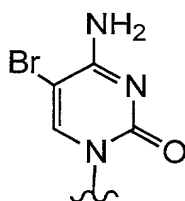
**Fig. 6**



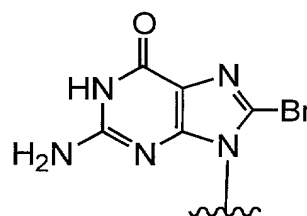
227



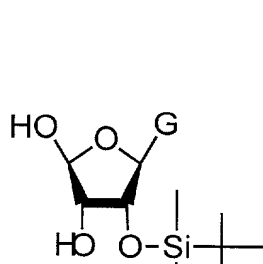
267



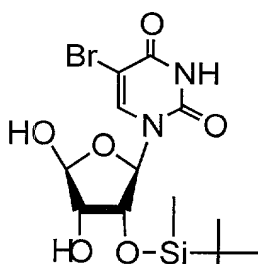
306



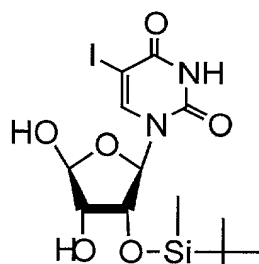
346



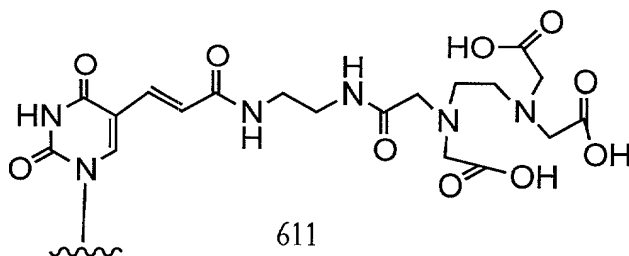
396



436



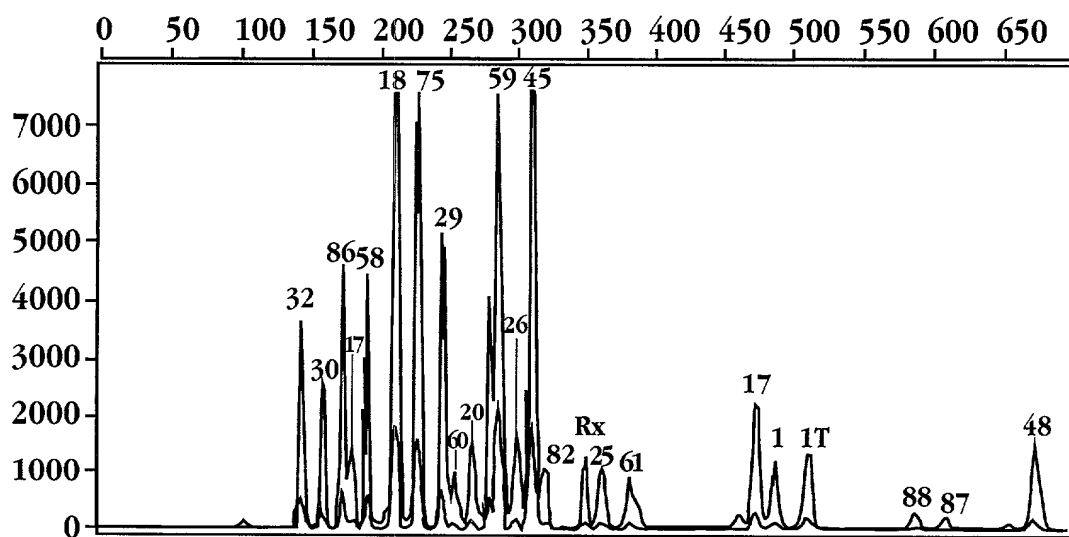
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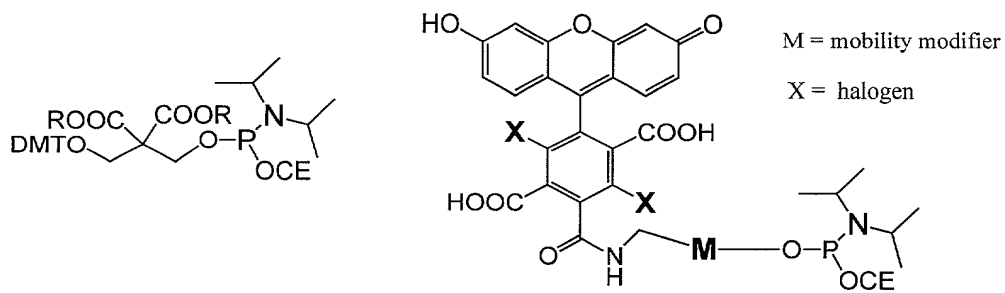
611

**Fig. 7**

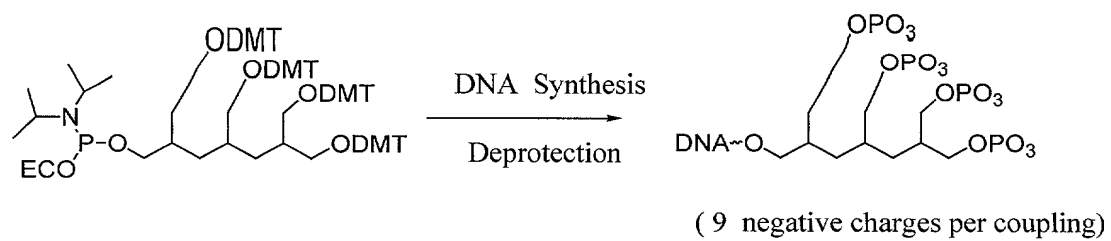




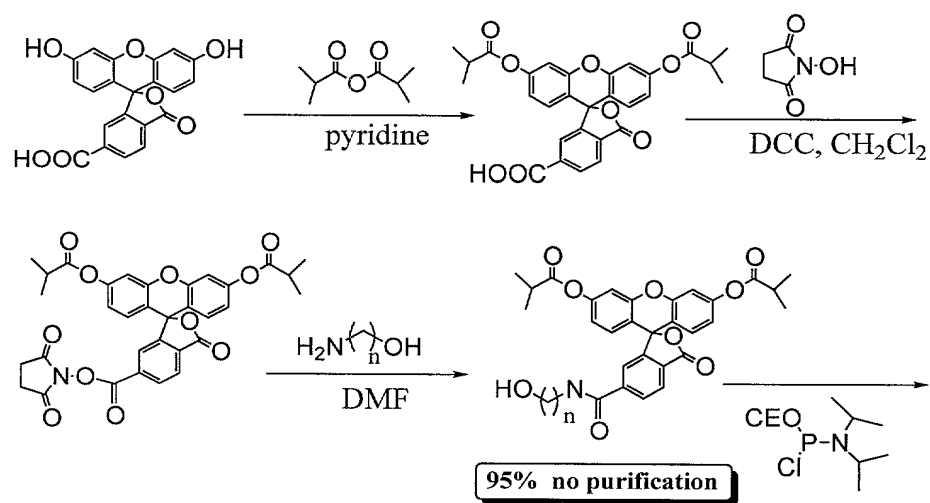
**Fig. 8**



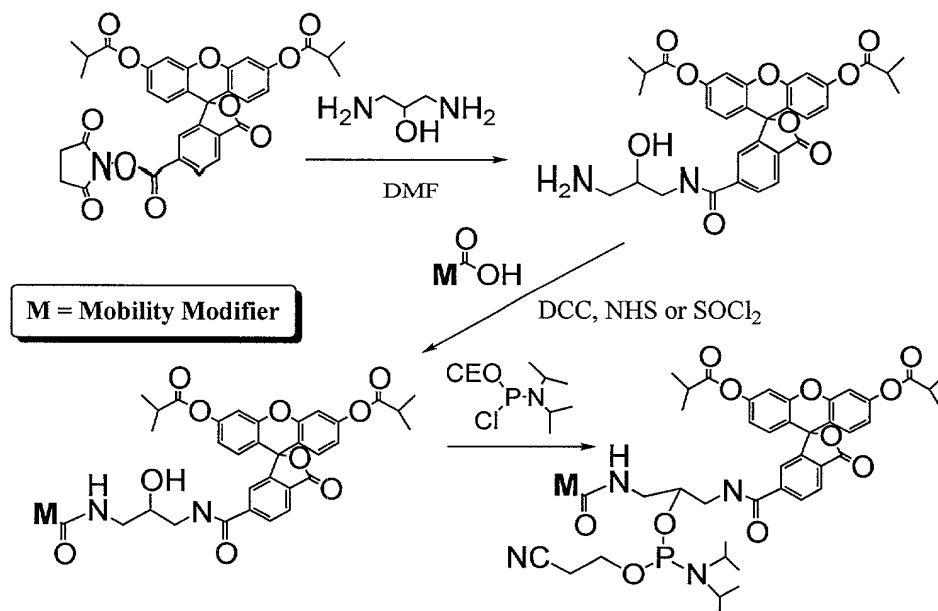
**Fig. 9**



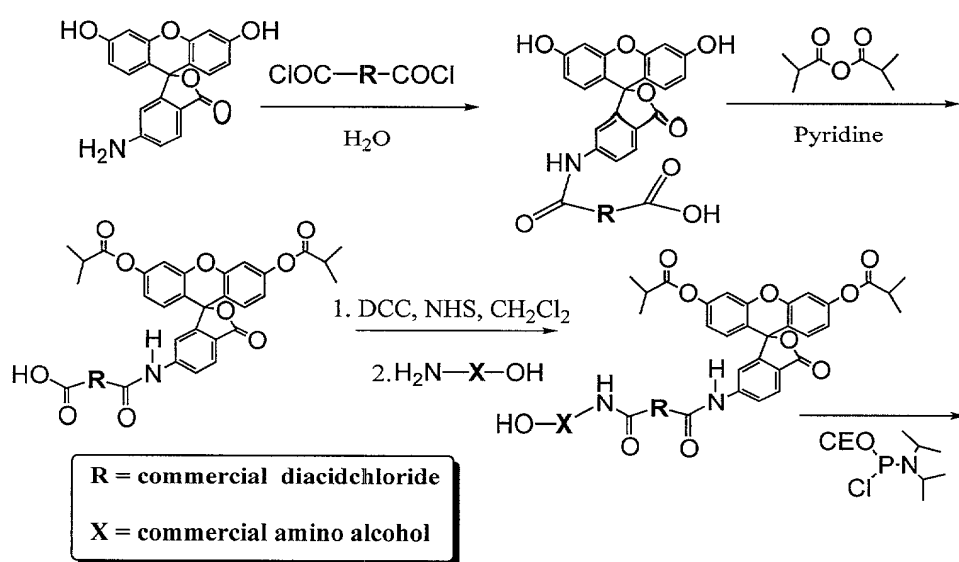
**Fig. 10**



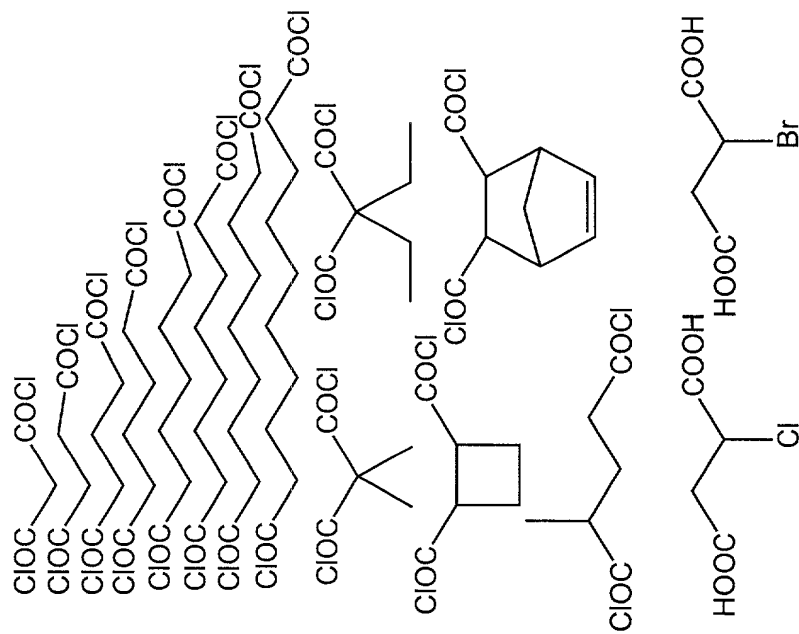
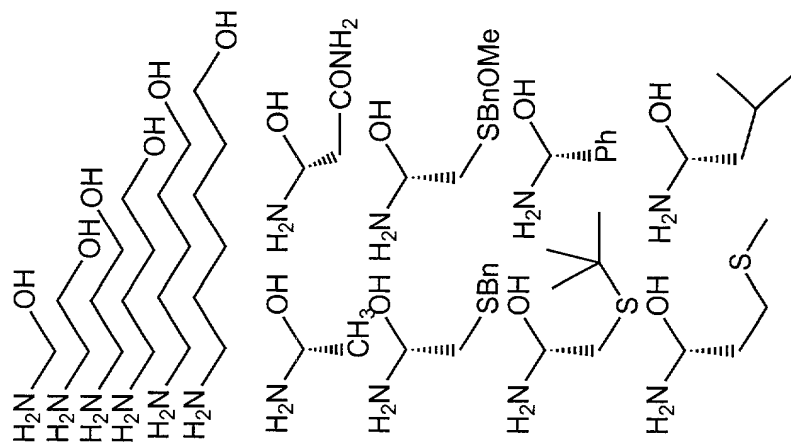
**Fig. 11**



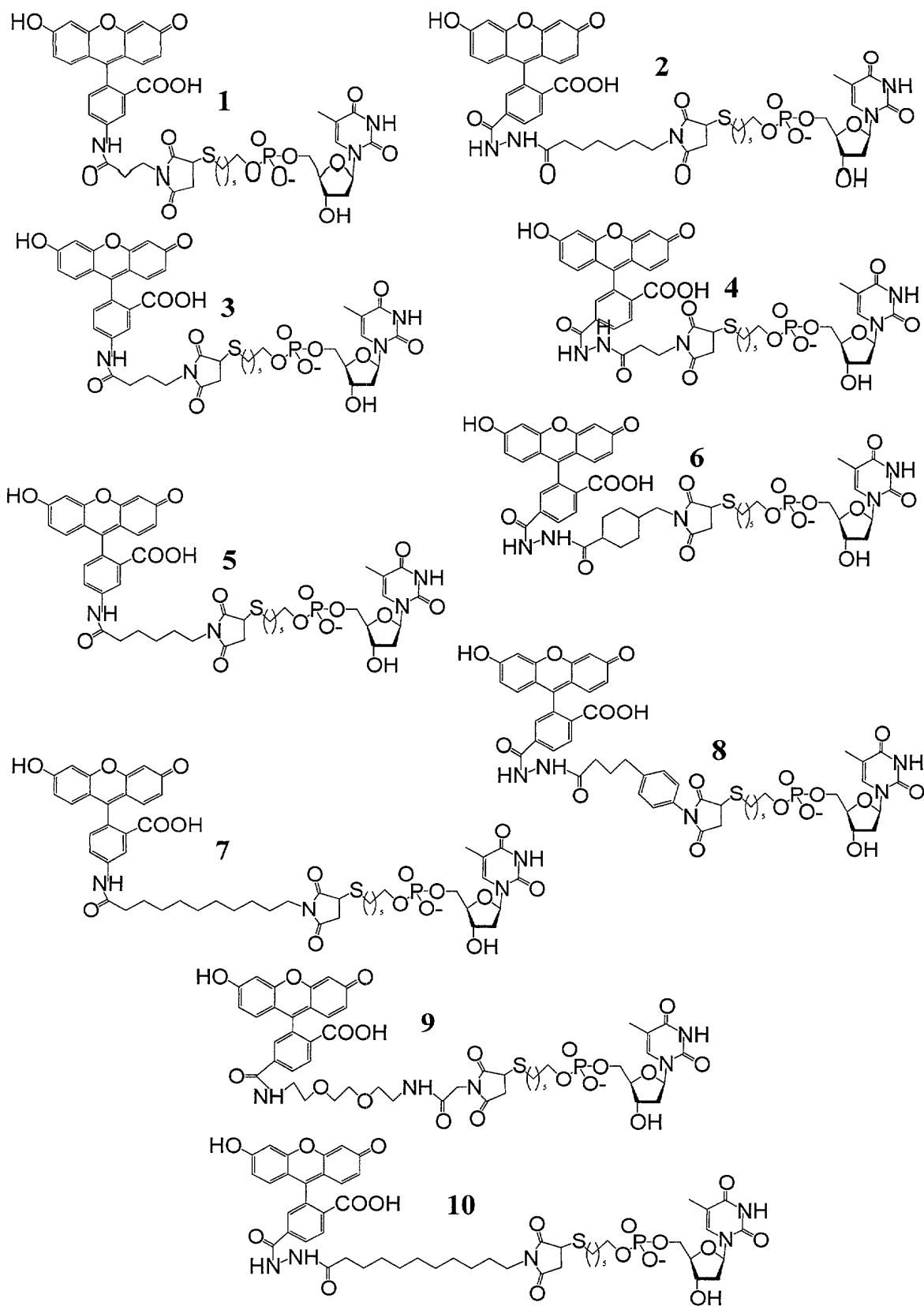
**Fig. 12**



**Fig. 13**

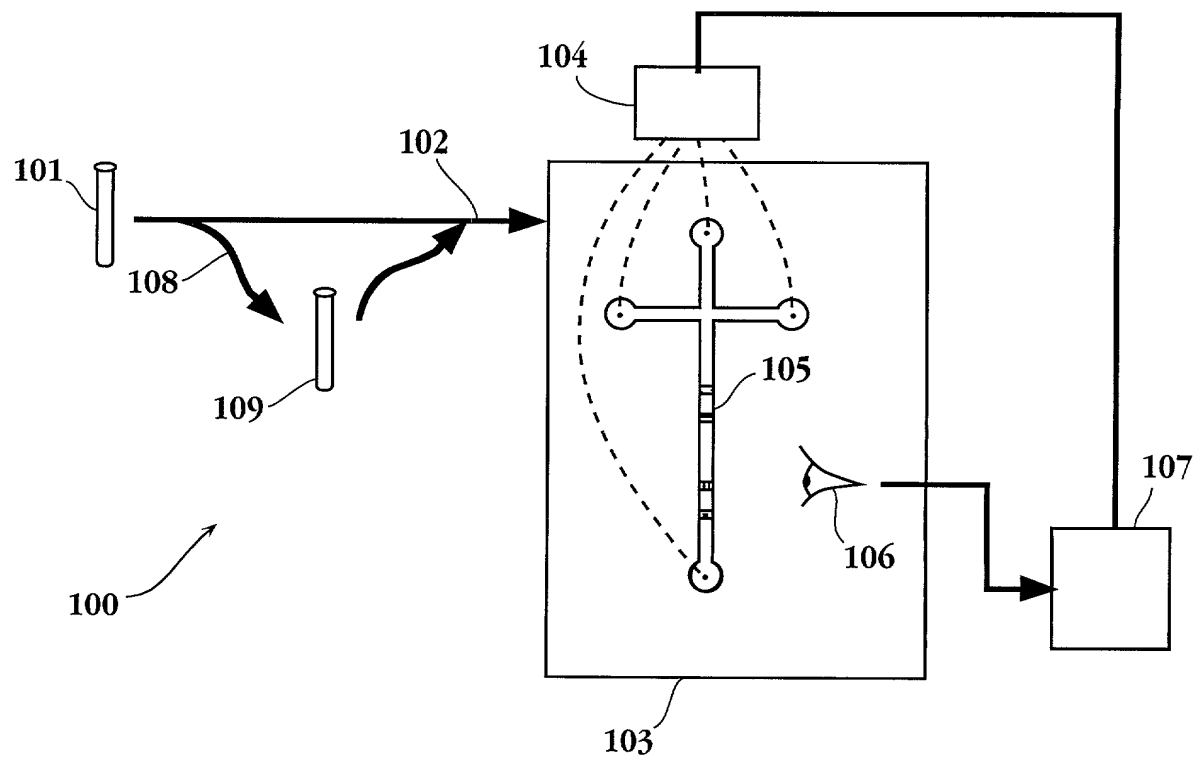


**Fig. 14**



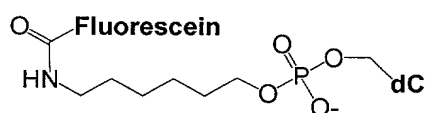
**Fig. 15**



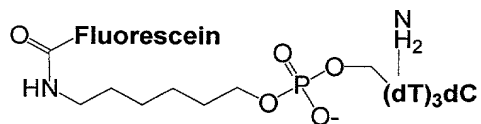


**Fig. 16**

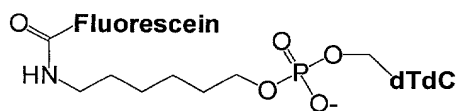
**ACLA001**



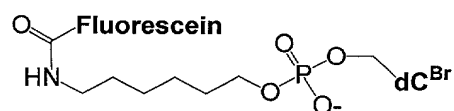
**ACLA007**



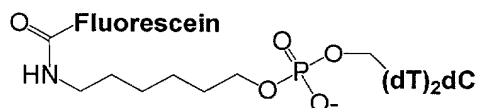
**ACLA002**



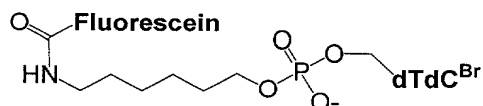
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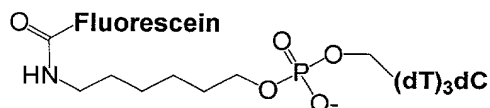
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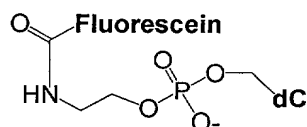
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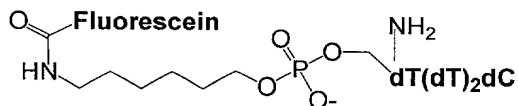
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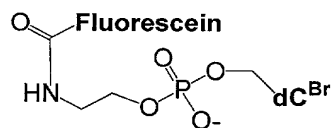
**ACLA010**



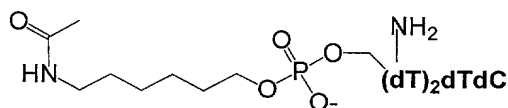
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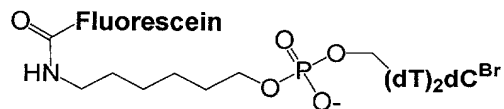
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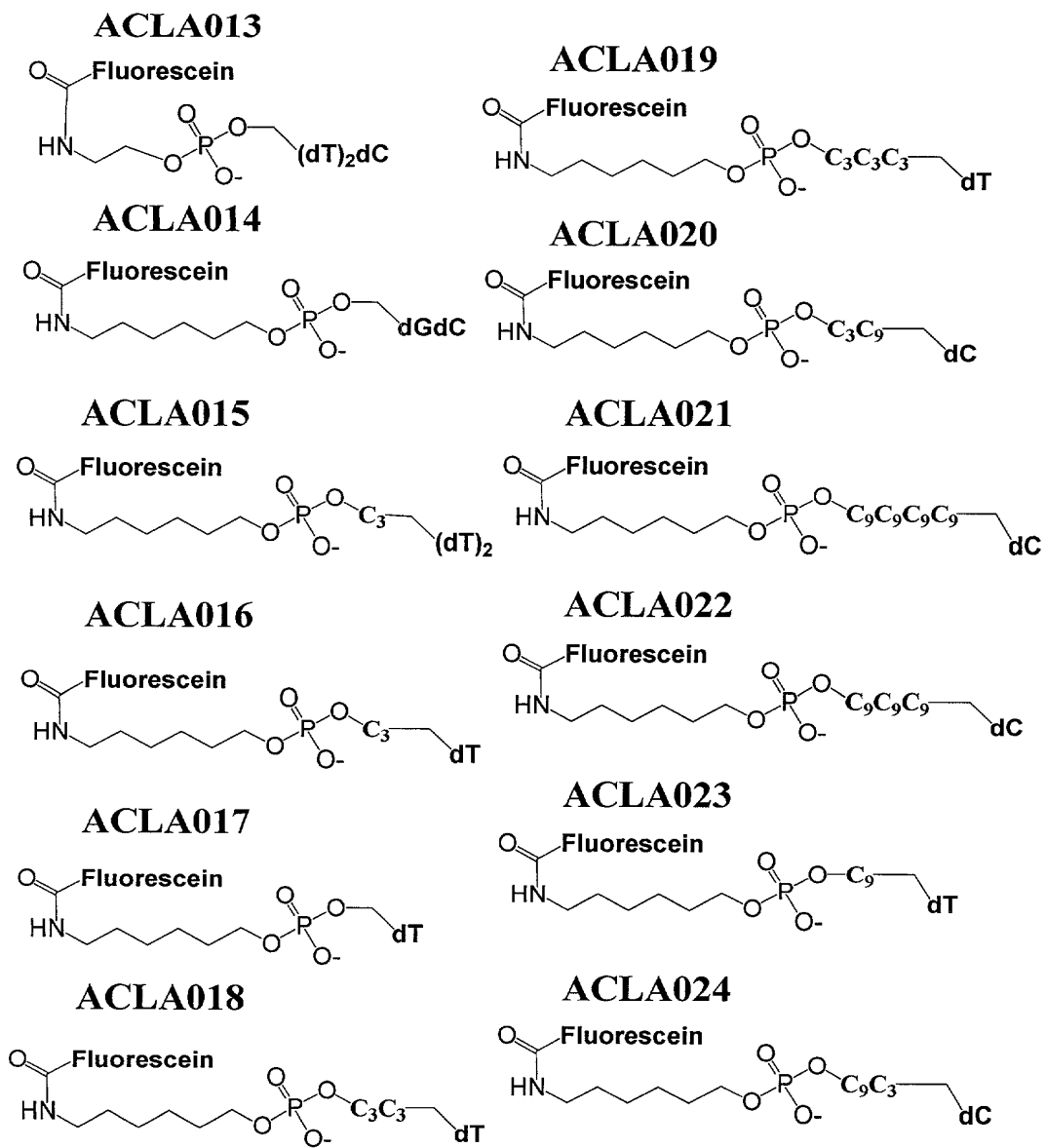
**ACLA006**



**ACLA012**

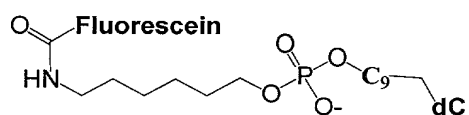


**Fig. 17A**

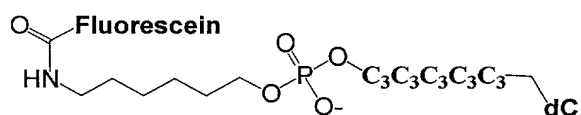


**Fig. 17B**

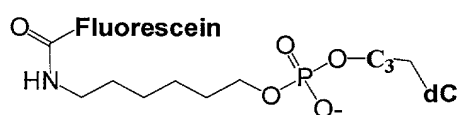
**ACLA025**



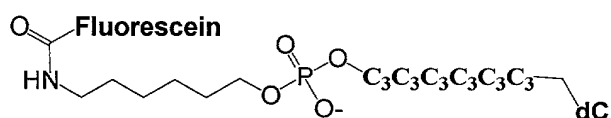
**ACLA031**



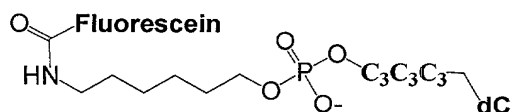
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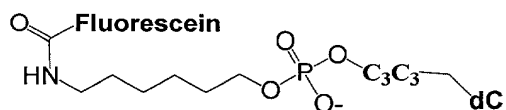
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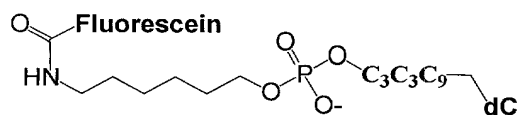
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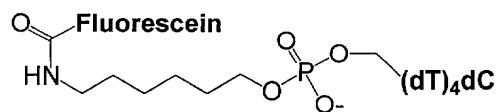
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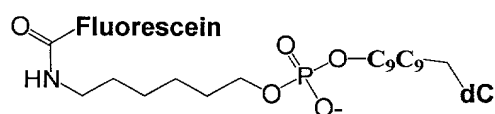
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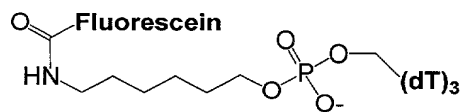
**ACLA034**



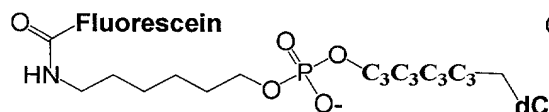
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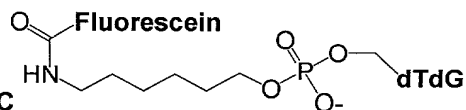
**ACLA035**



**ACLA030**

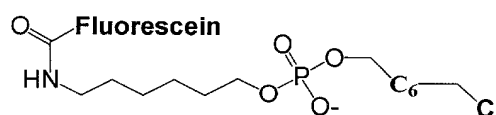
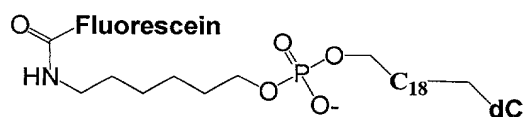
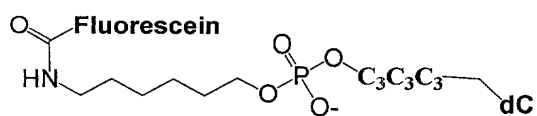
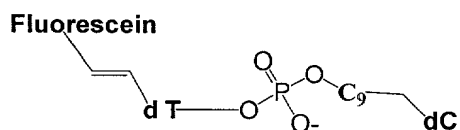
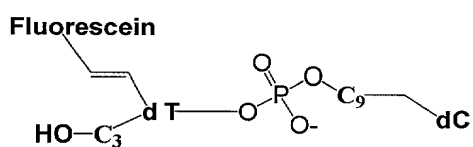
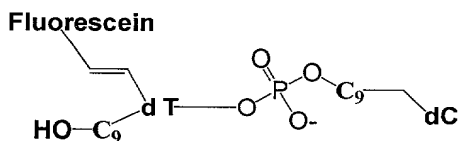
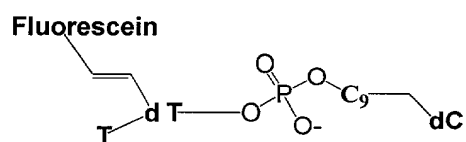
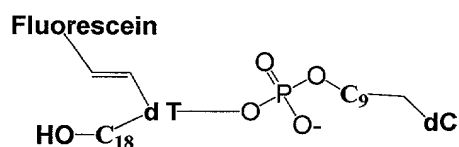
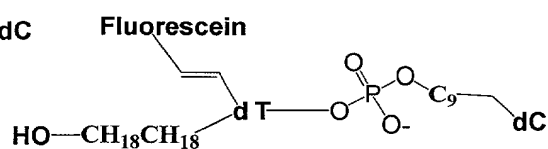


**ACLA036**

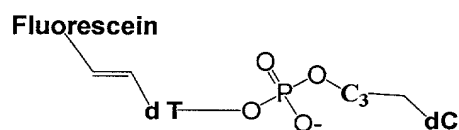
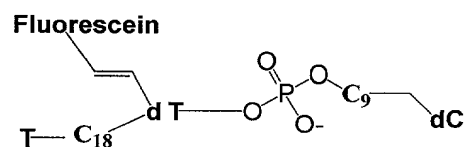


**Fig. 17C**

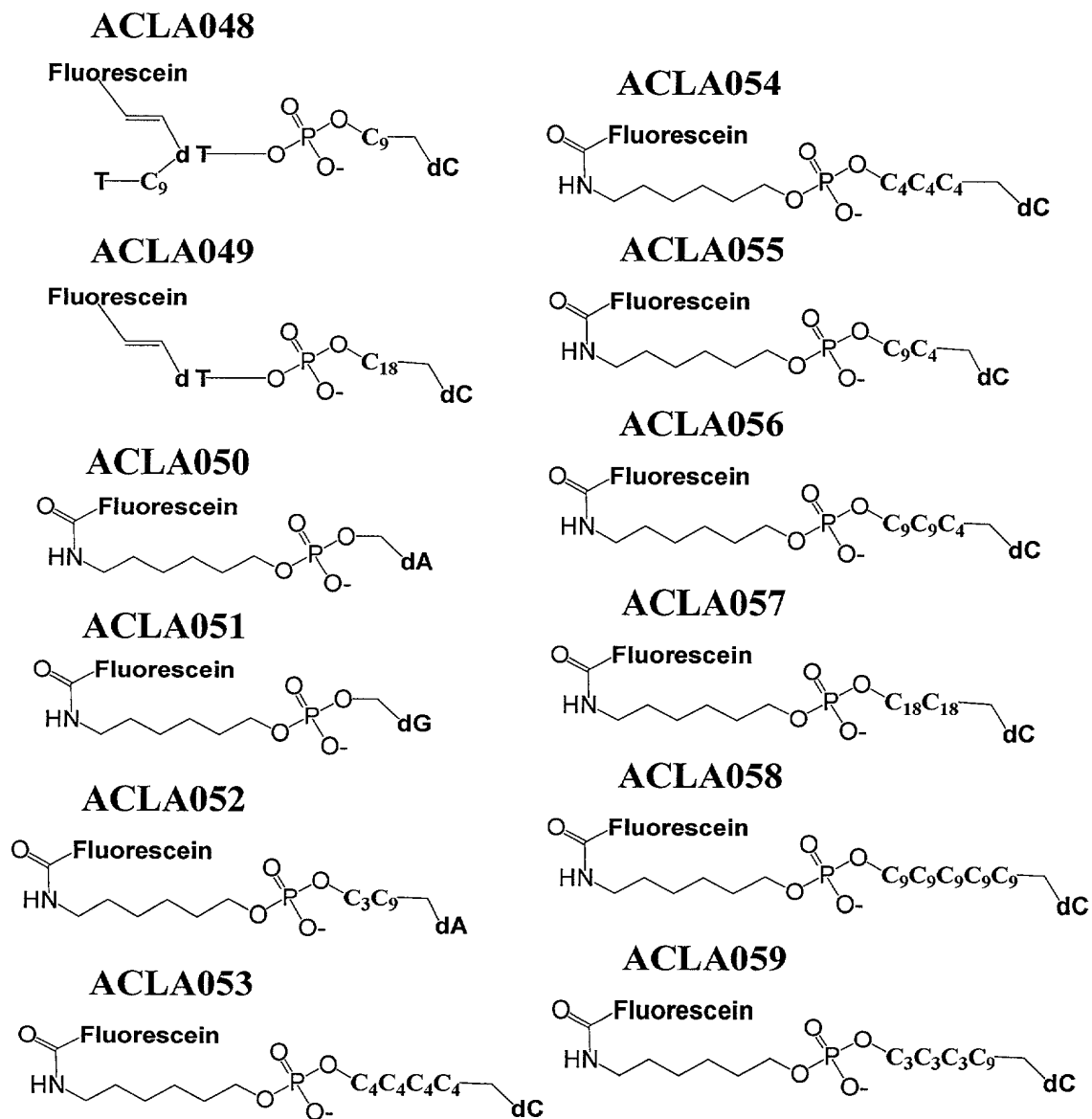
**ACLA037**

**ACLA038****ACLA039****ACLA040****ACLA041****ACLA042****ACLA043****ACLA044****ACLA045**

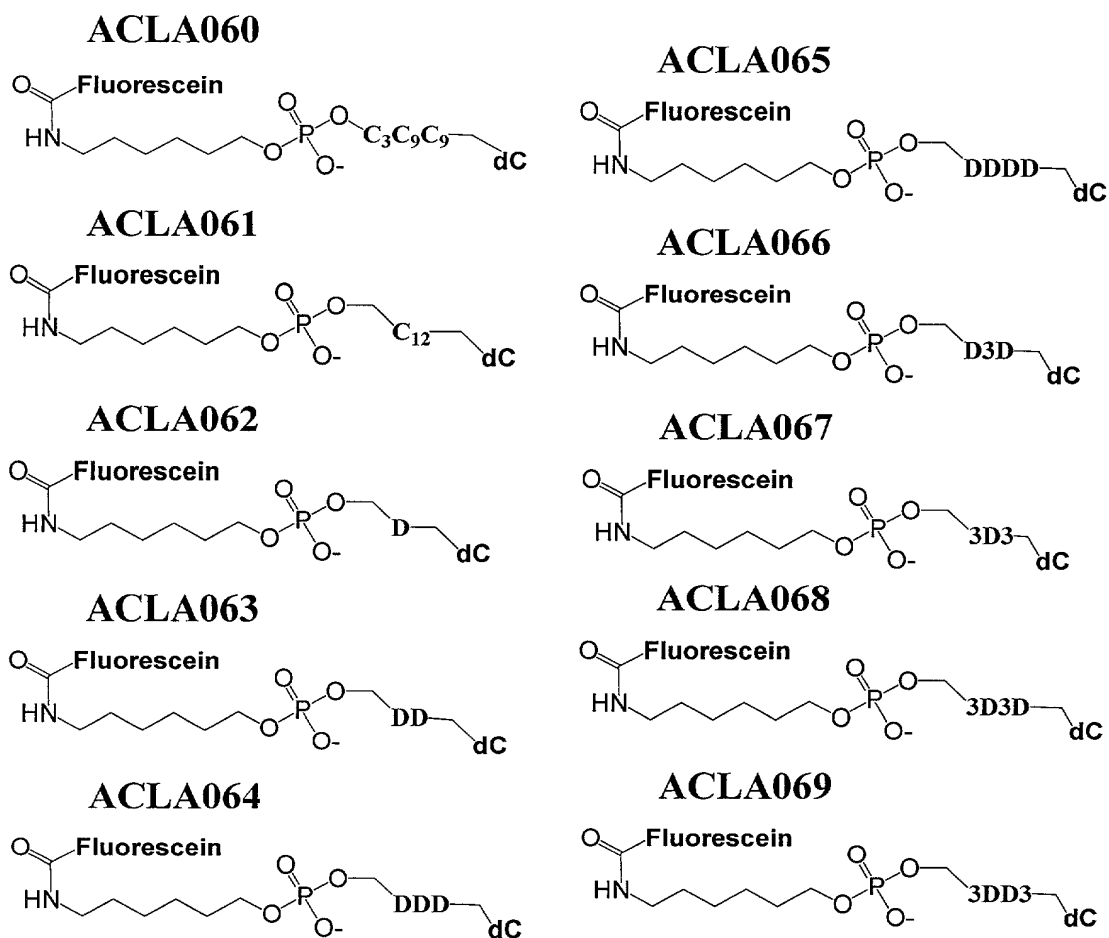
**ACLA046**

**ACLA047**

**Fig. 17D**

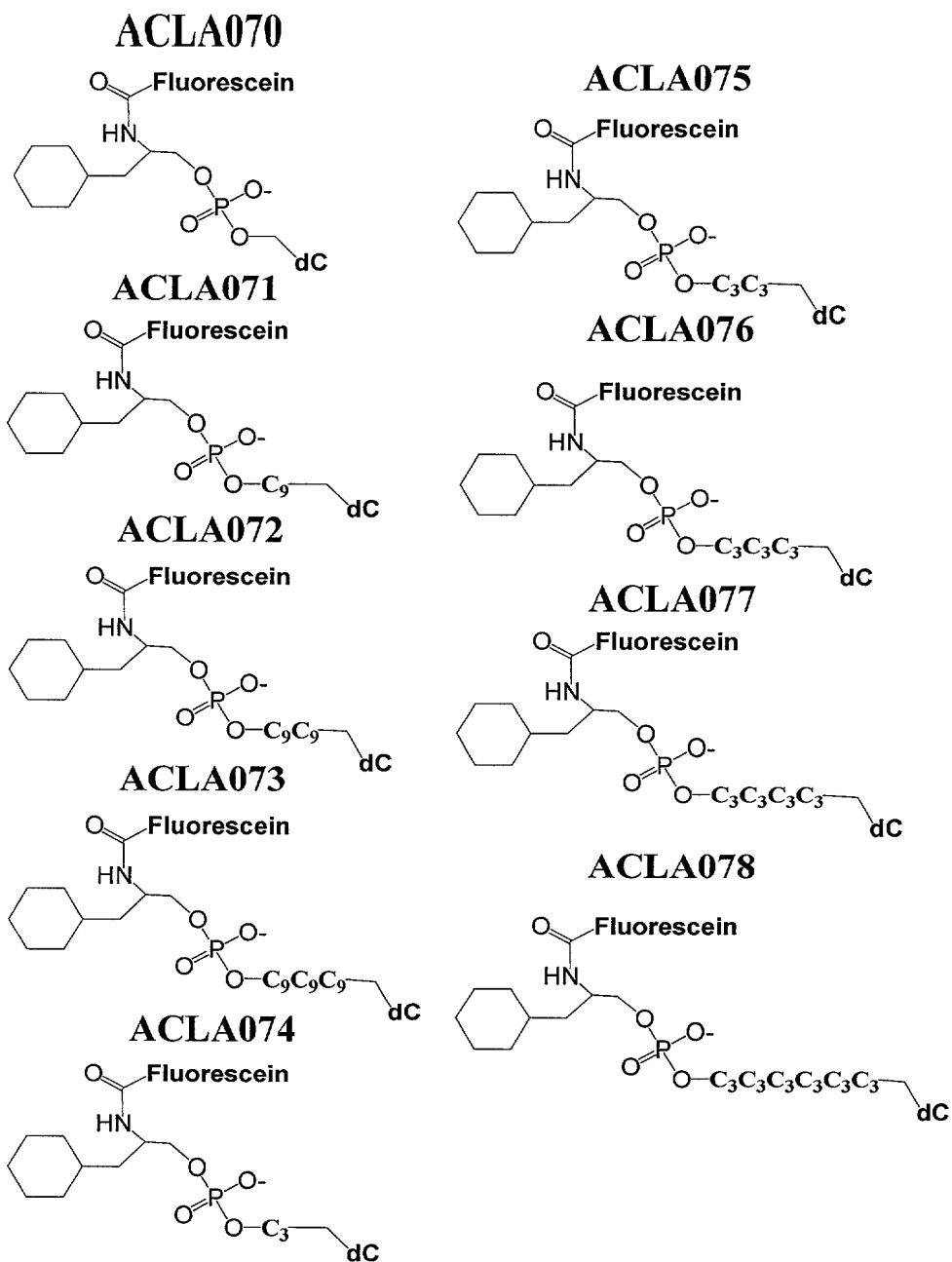


**Fig. 17E**



**Fig. 17F**

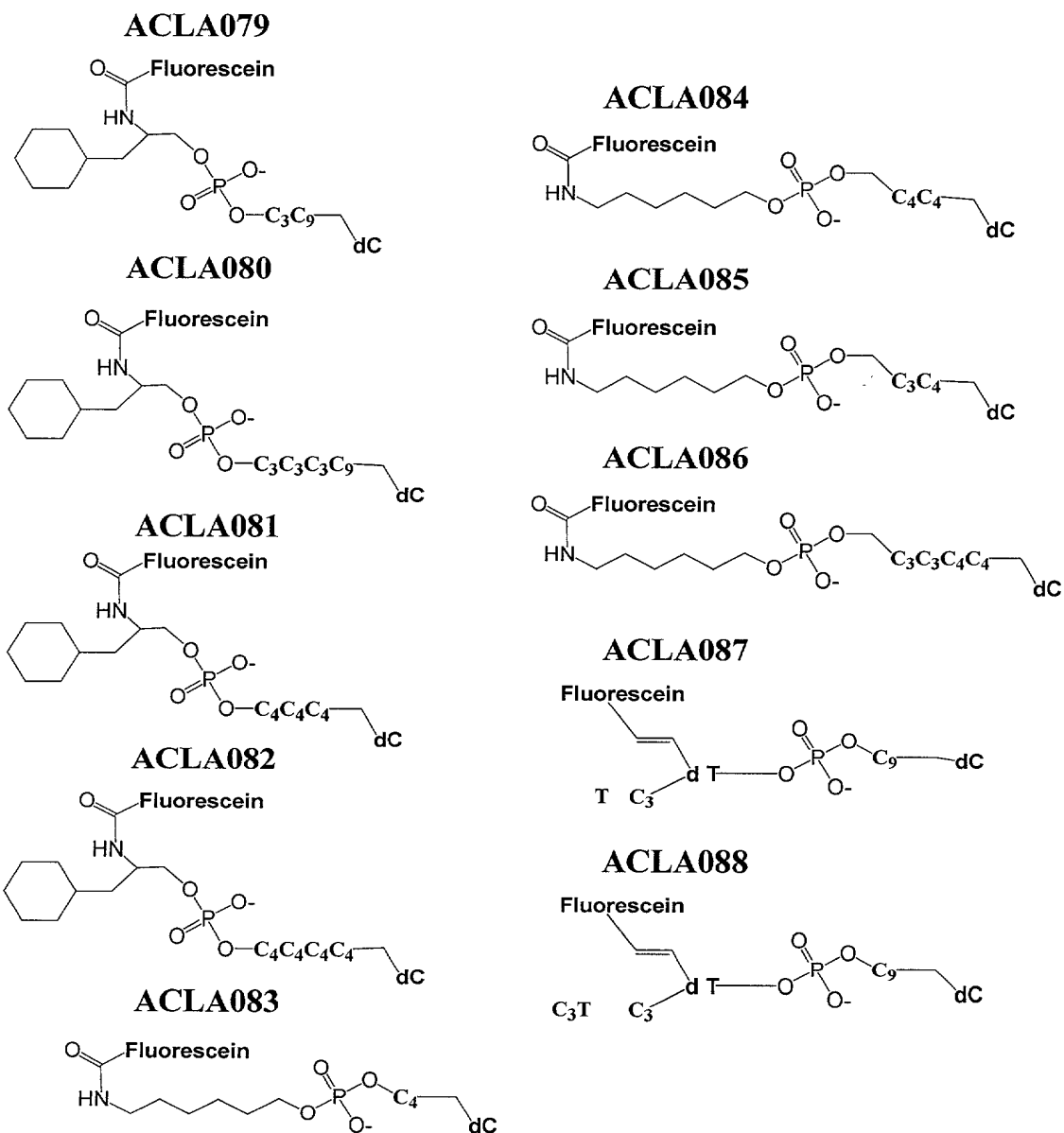
Chemical structures of fluorescently labeled nucleotides (ACLA070-ACLA078) showing the fluorescein moiety, a cyclohexyl group, and various alkyl chains (dC, C<sub>3</sub>, C<sub>9</sub>) attached to the phosphate group.



**Fig. 17G**

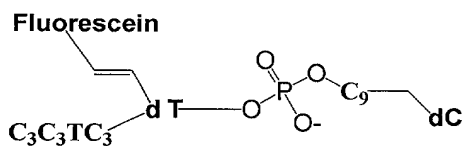


FIG. 17H

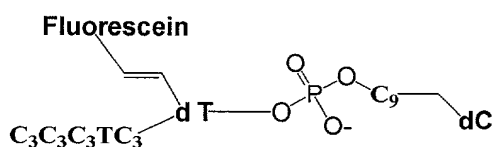


**Fig. 17H**

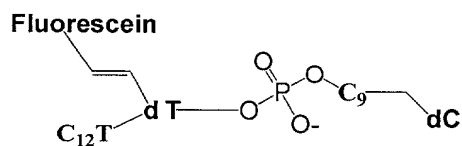
# **ACLA089**



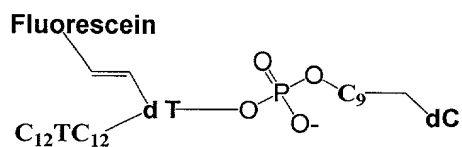
# **ACLA090**



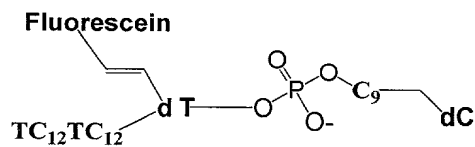
# **ACLA091**



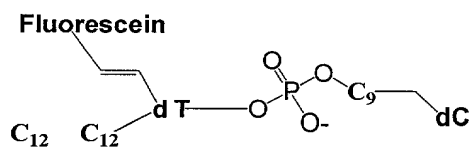
# **ACLA092**



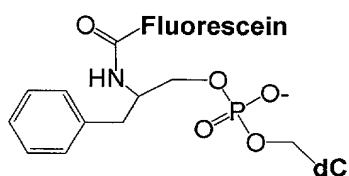
# **ACLA093**



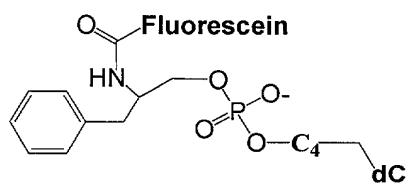
# **ACLA094**



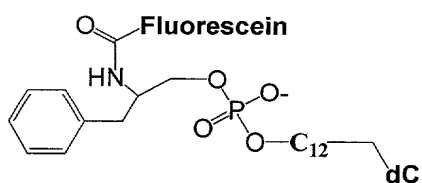
# **ACLA095**



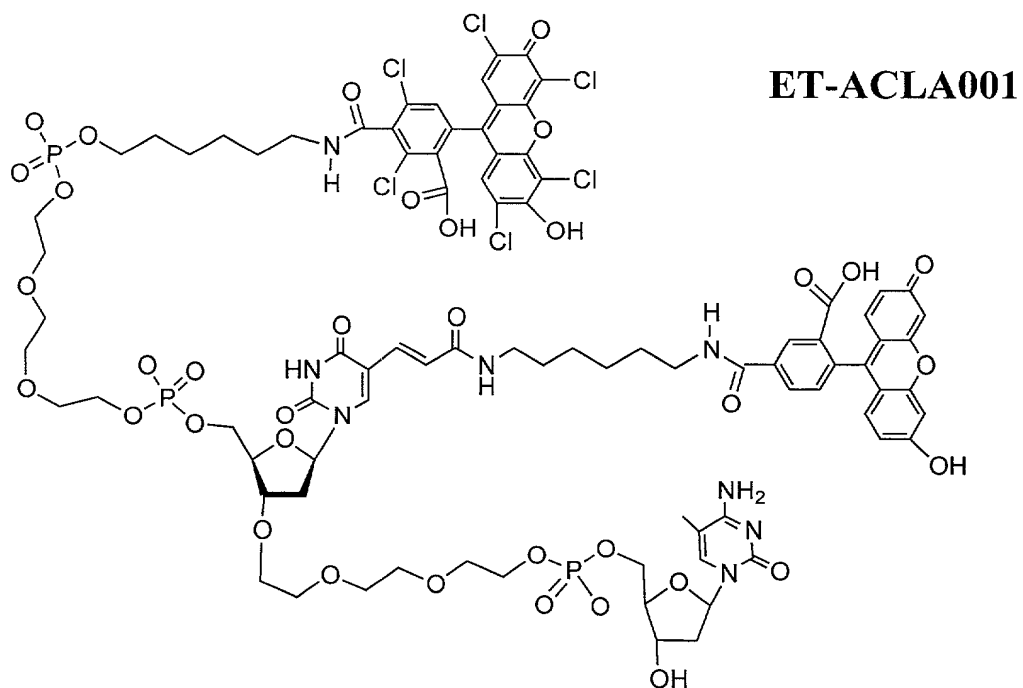
# **ACLA096**



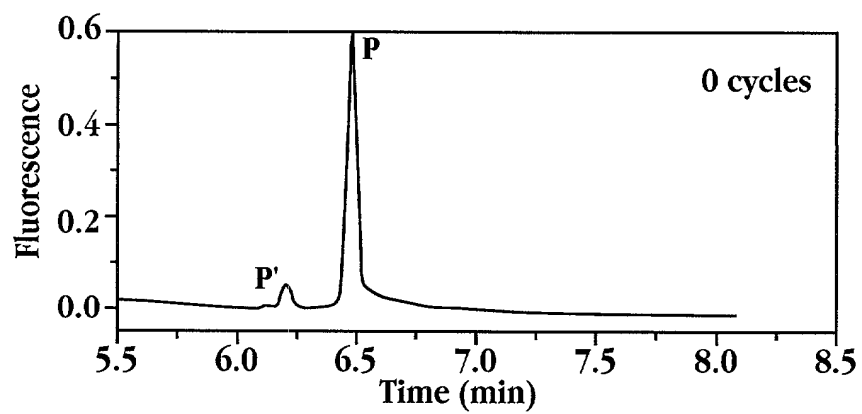
# **ACLA097**



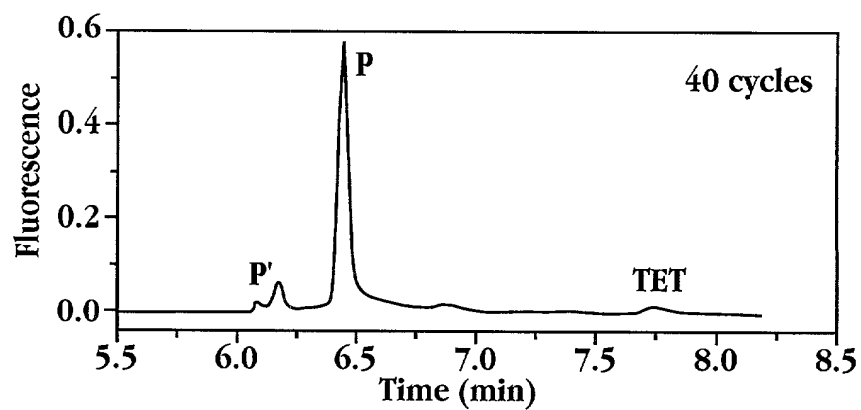
**Fig. 17I**



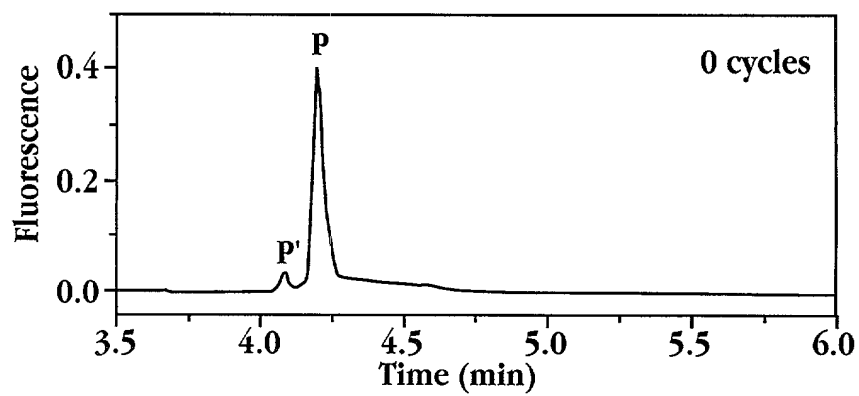
**Fig. 17J**



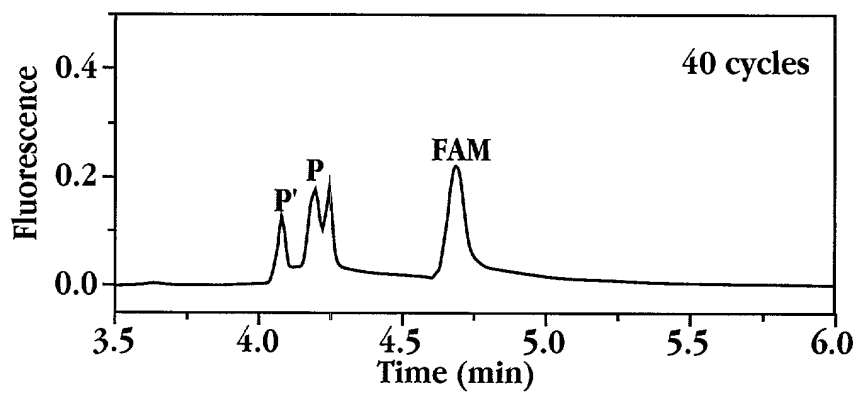
**Fig. 18A**



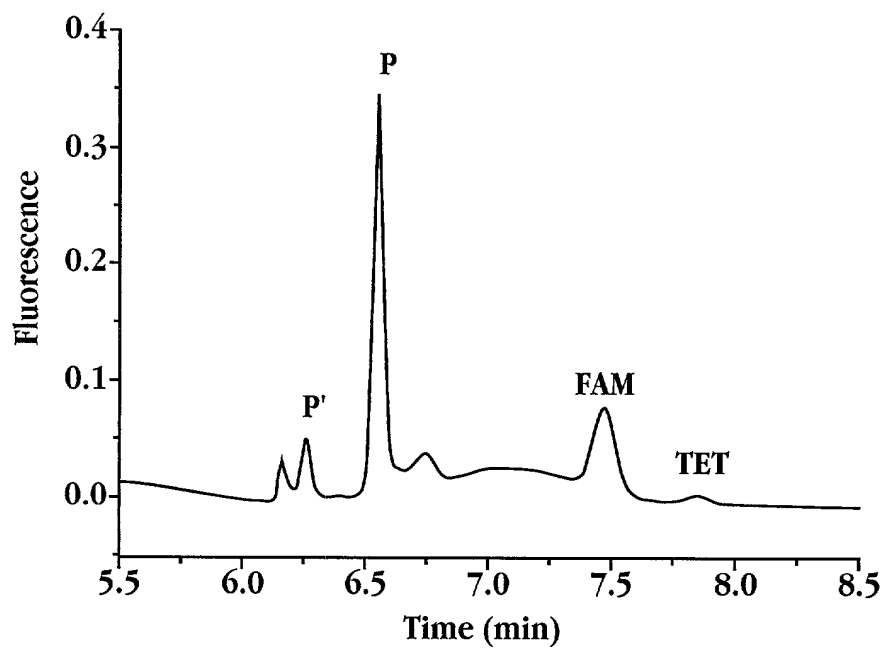
**Fig. 18B**



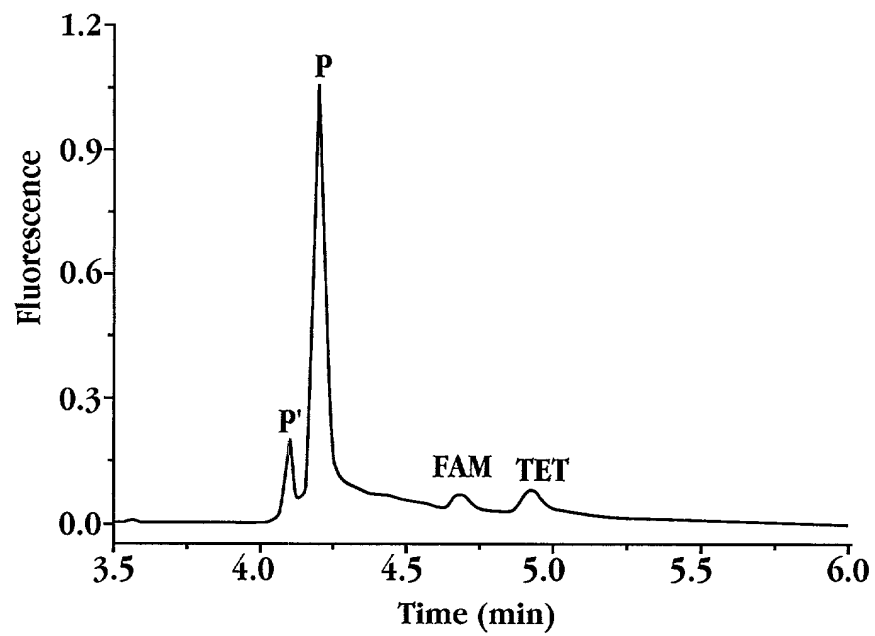
**Fig. 19A**



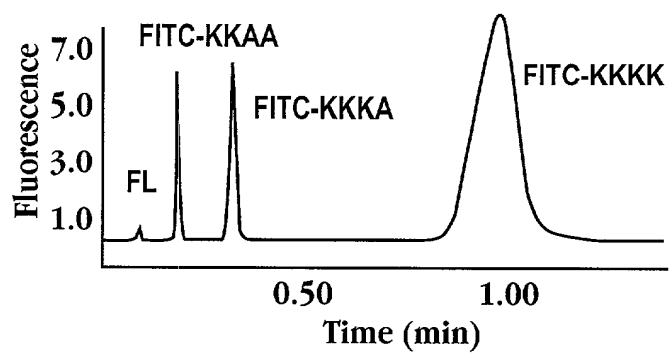
**Fig. 19B**



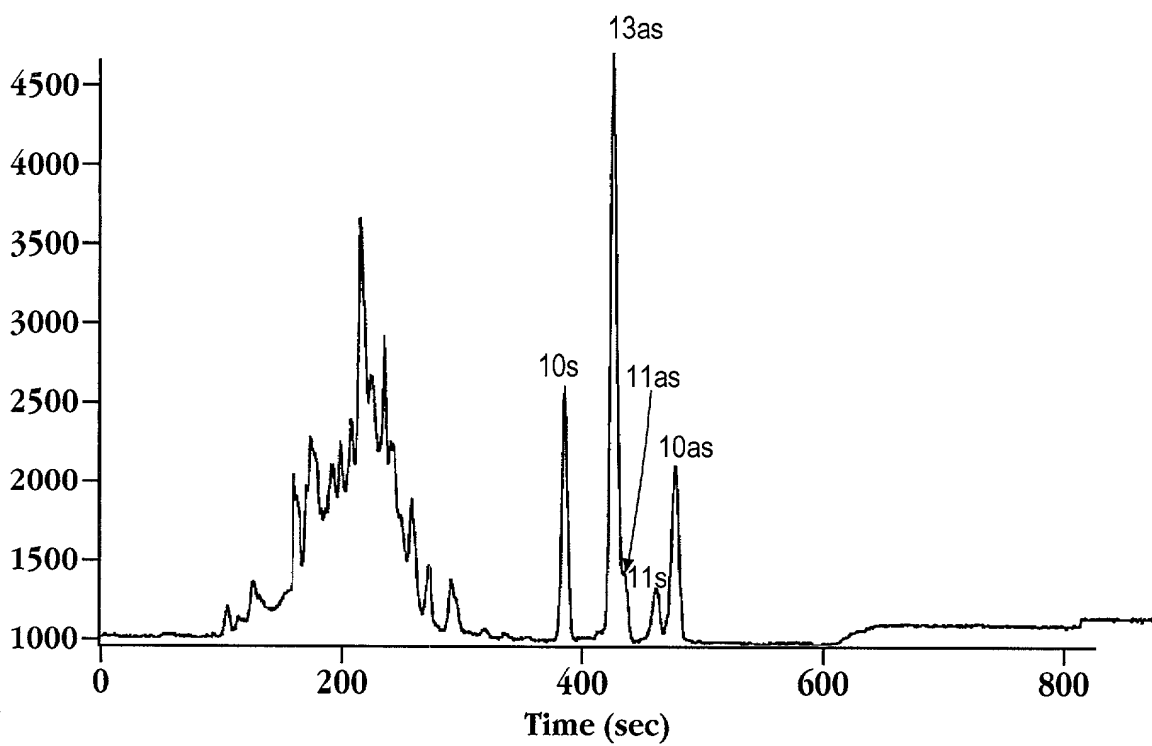
**Fig. 20**



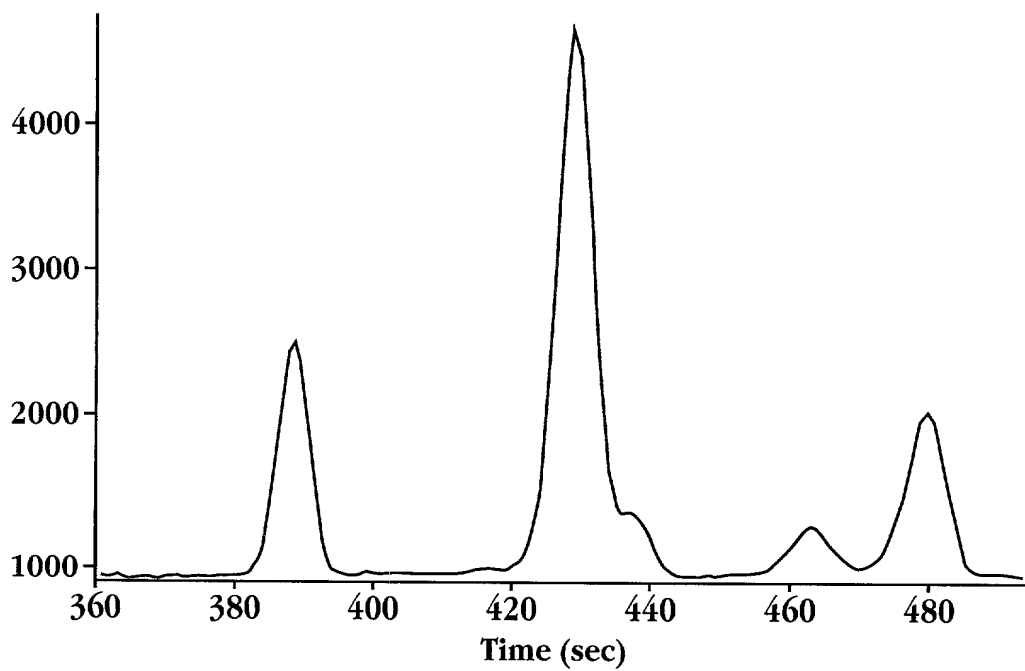
**Fig. 21**



**Fig. 22**

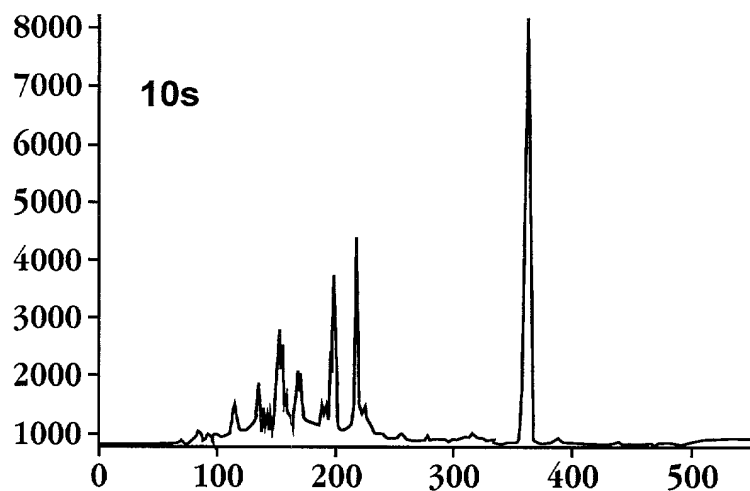


**Fig. 23A**

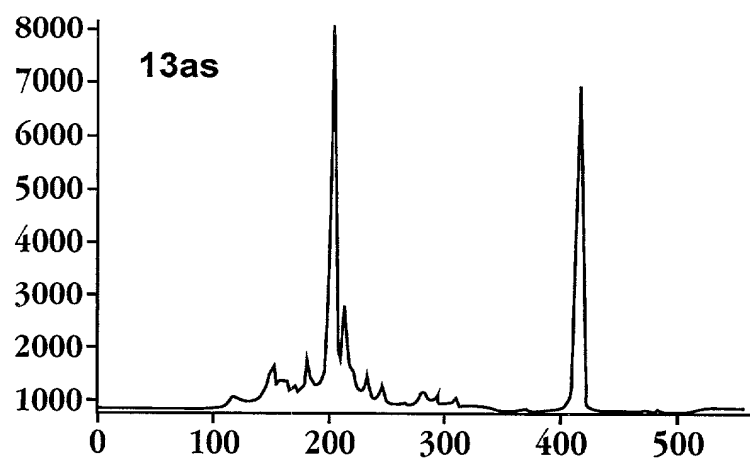


**Fig. 23B**

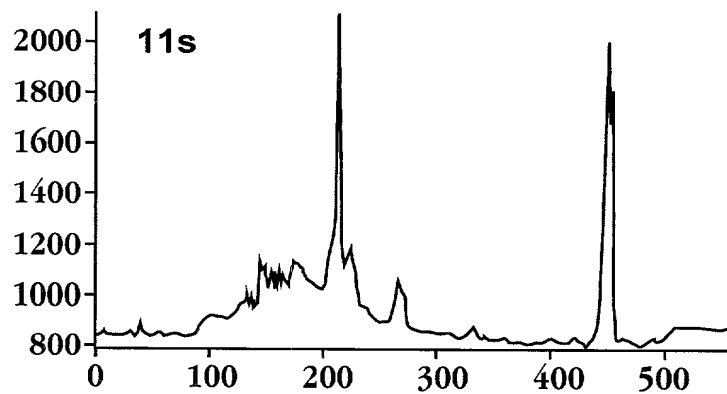




**Fig. 23C**



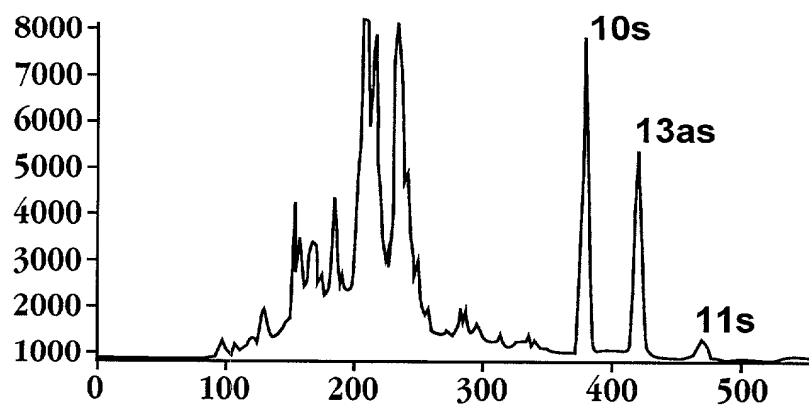
**Fig. 23D**



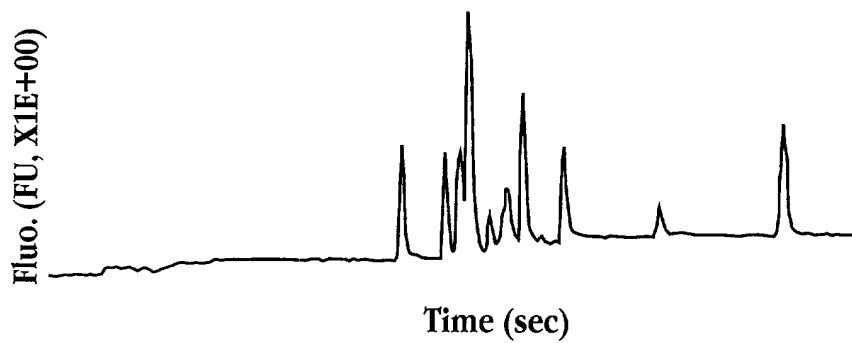
**Fig. 23E**



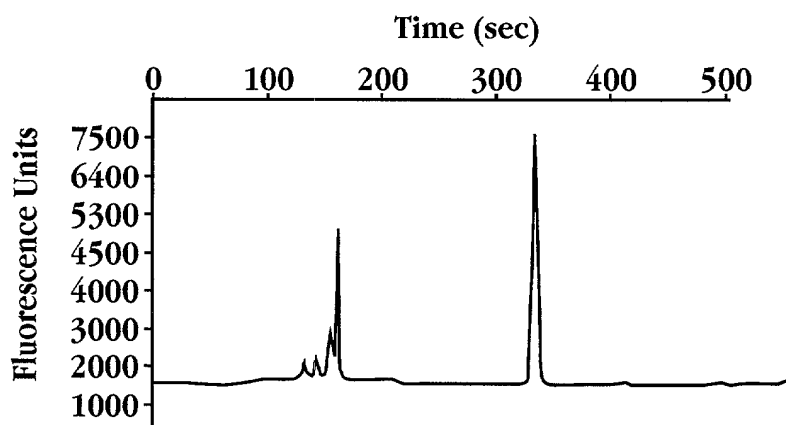
**Fig. 23F**



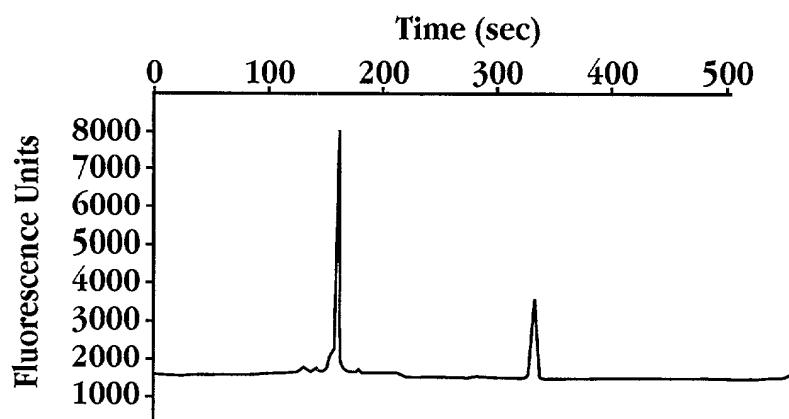
**Fig. 23G**



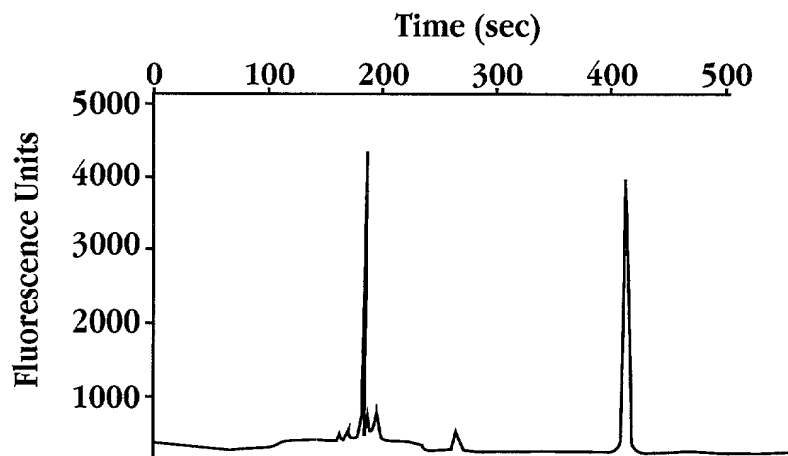
**Fig. 24**



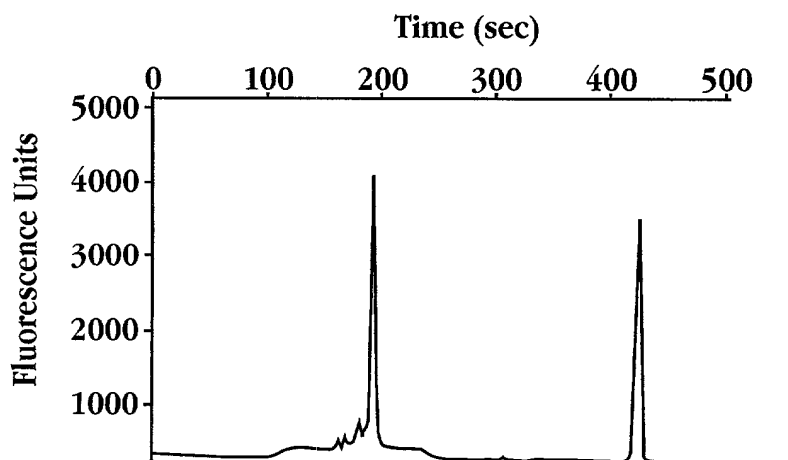
**Fig. 25A**



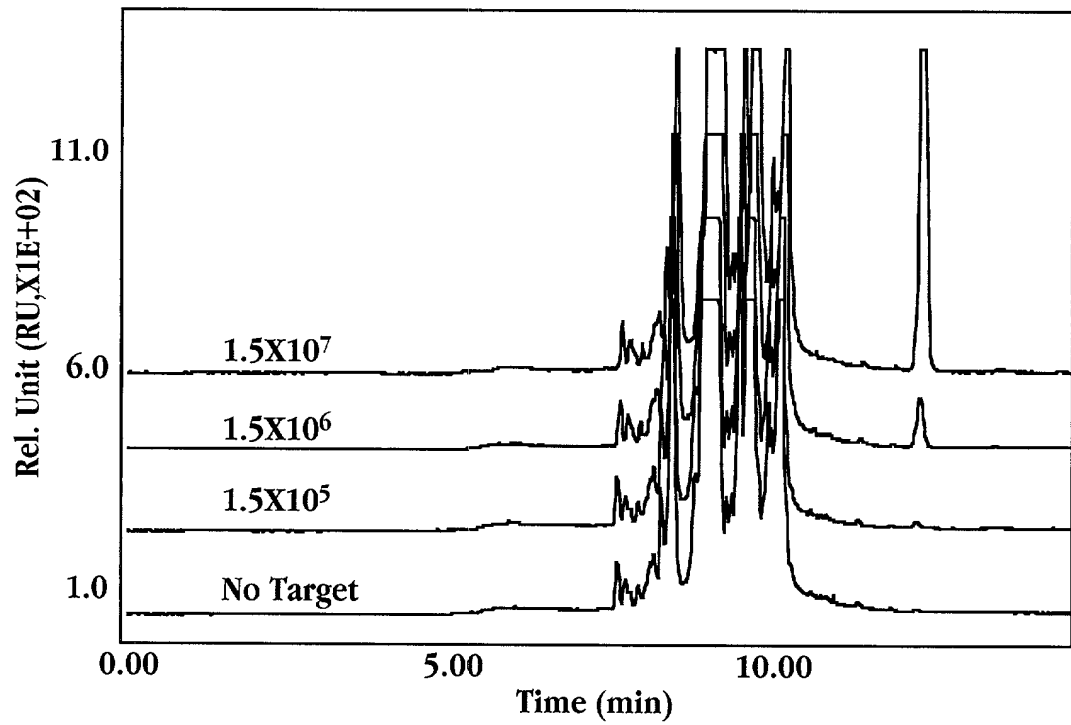
**Fig. 25B**



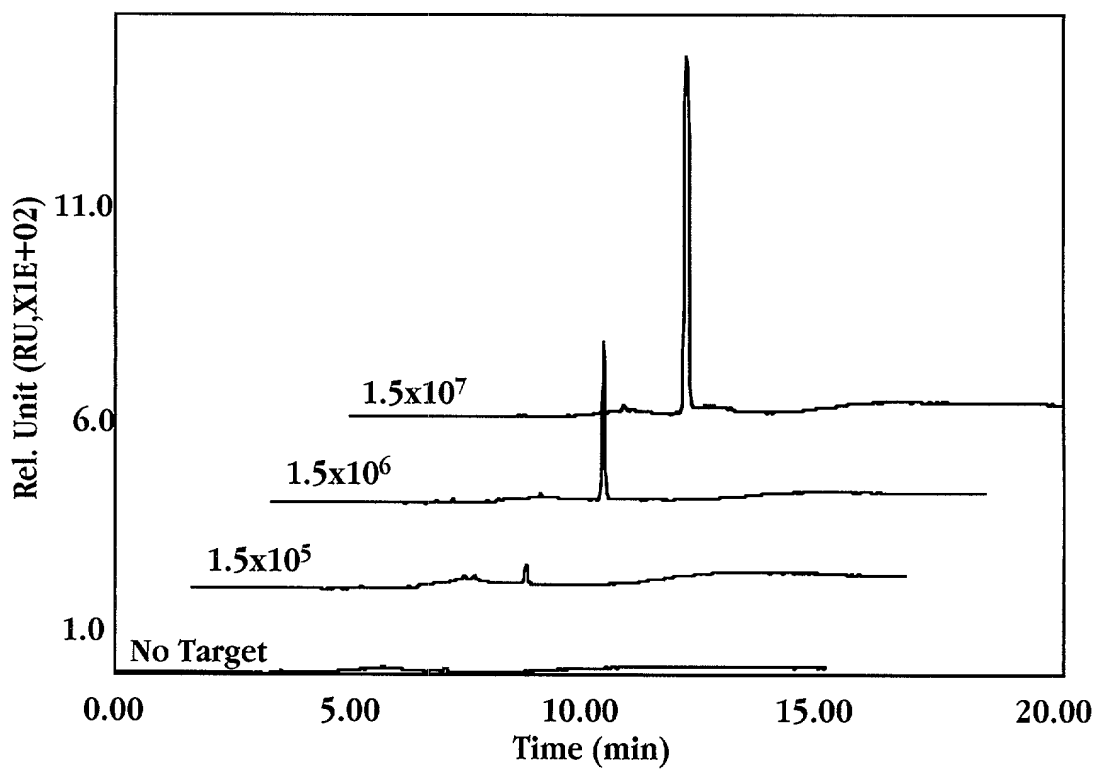
**Fig. 25C**



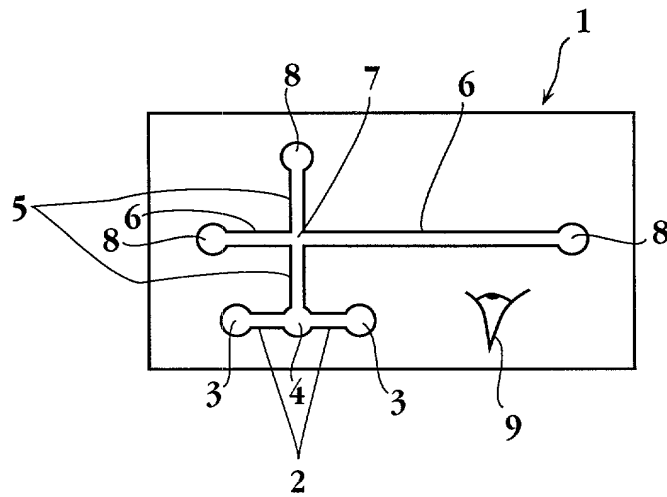
**Fig. 25D**



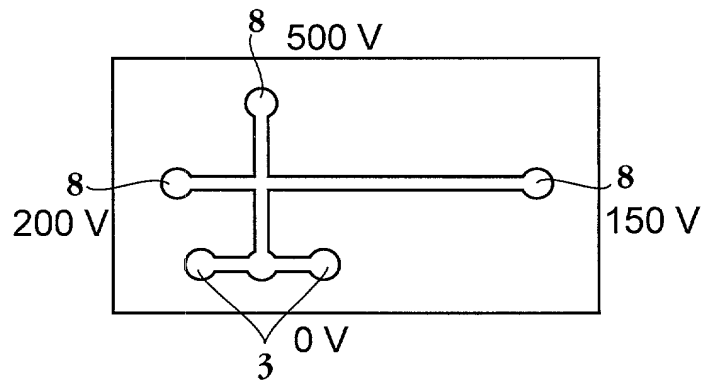
**Fig. 26**



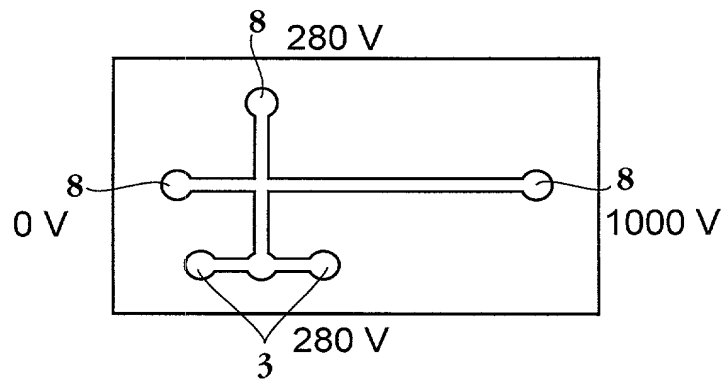
**Fig. 27**



**Fig. 28A**

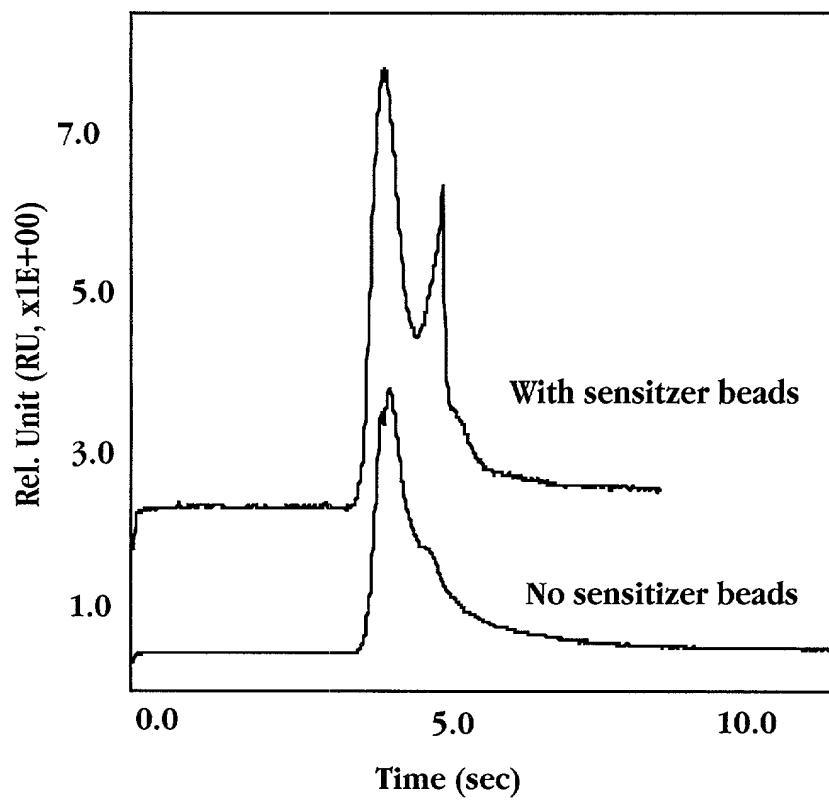


**Fig. 28B**

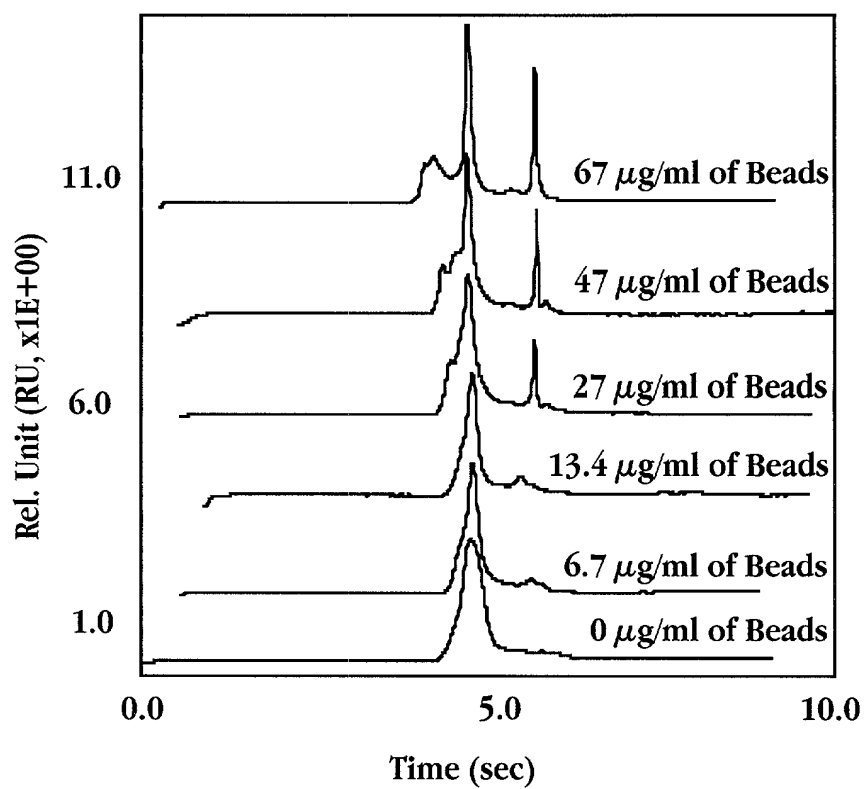


**Fig. 28C**

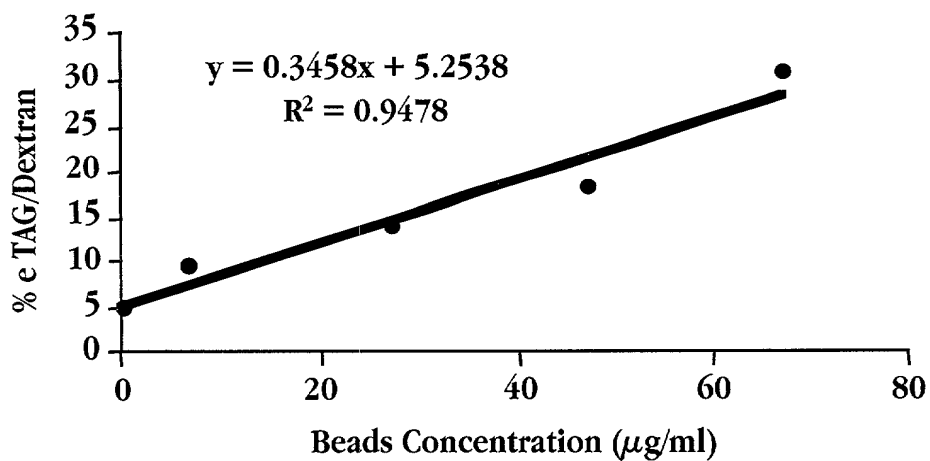




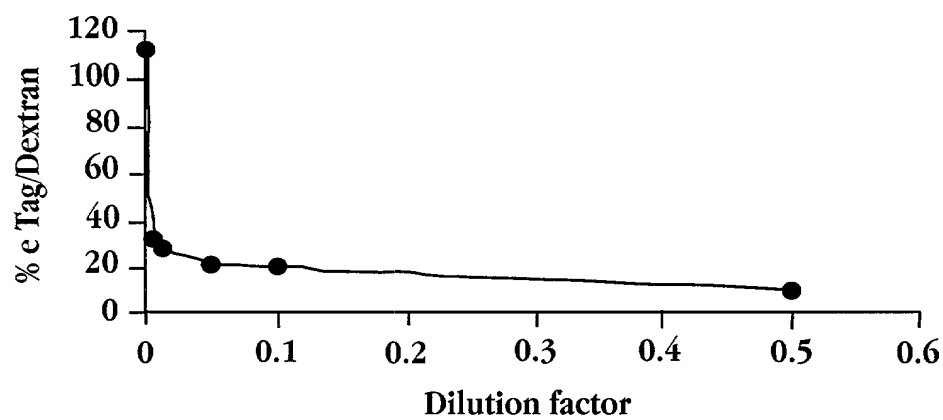
**Fig. 29**



**Fig. 30**



**Fig. 31**



**Fig. 32**



Fig. 33

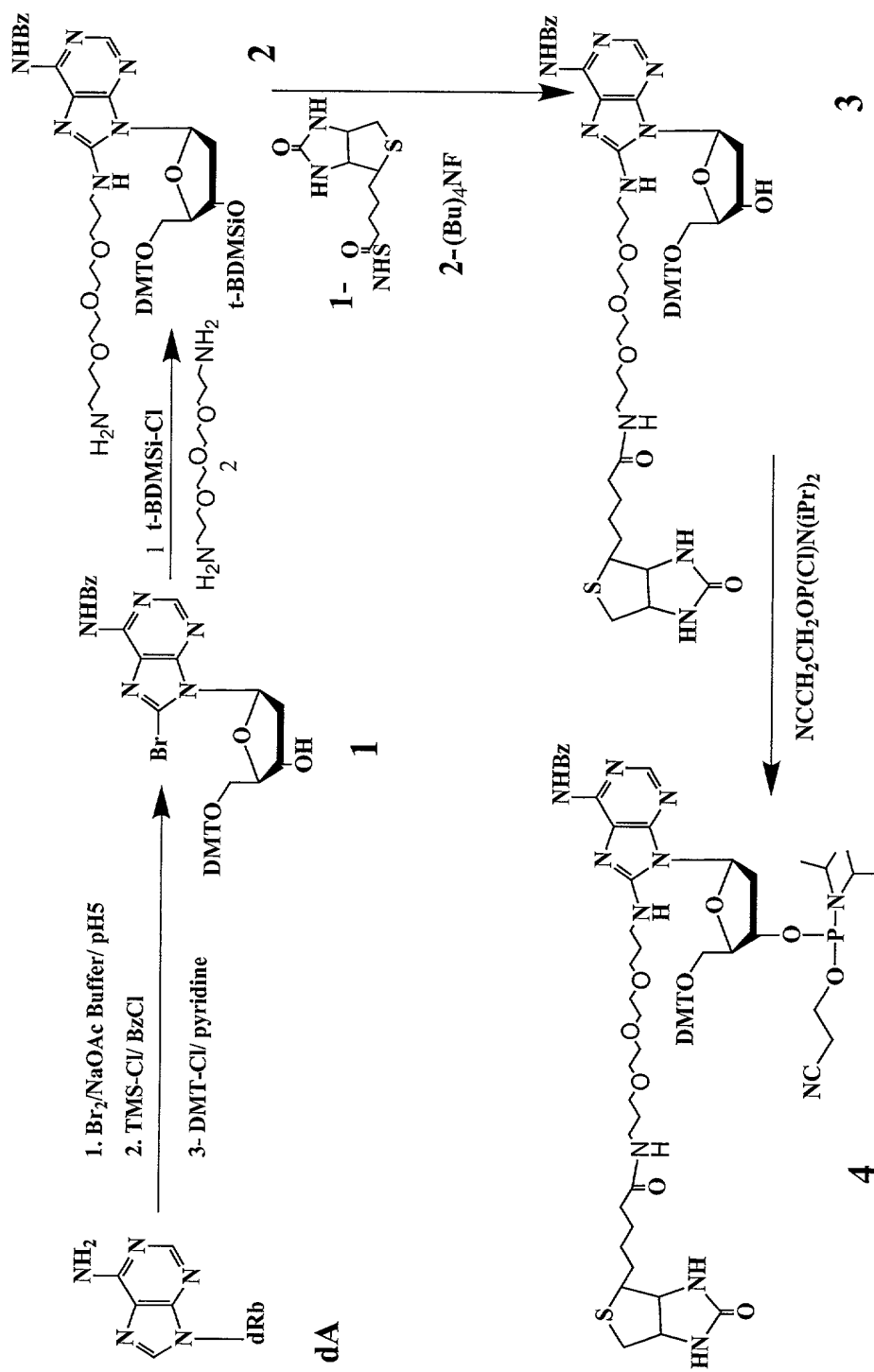


Fig. 34